PORTABLE DEVICE FOR TRANSPORTING OBJECTS

Field of the invention

[1] The present invention relates to a device for transporting objects that can be carried on one's back and is convertible into a seat or berth and a respective conversion method. The device is for example particularly useful as a rucksack in one or more of the fields of camping, trekking, hiking, mountaineering, hunting, fishing and/or army/armed forces.

Background of the invention

[2] Current systems for transporting objects or rucksacks are frequently used in the fields of leisure time and sports and particularly in the field of so-called outdoor activities. In these fields, they mainly serve for transporting clothes, food and any accessories that are necessary for outdoor life or for fulfilling any requirements to be met. A multitude of objects, auxiliary equipment and devices with special functions and special fields of application are involved here, in particular, tents, camping mats, air mattresses, seat pads, etc.

[3] The different requirements and demands, such as protection against rain or overnight accommodation, lead to a multitude of objects to be transported, a high transport volume and a high transport weight. Moreover, utilizing such accessories, i.e. unpacking and pitching or striking and packing them, means a restriction of the freedom of movement and choice and of the desired comfort.

[4] It is often difficult to use a rucksack for leaning back when resting. Either the rucksack is too short to support the head of the person carrying it or, if leaned against a wall or the like, it has an unfavorable inclination so that leaning back, in particular leaning back one's head is uncomfortable or even impossible. In addition, if the user leans back against the rucksack, he/she cannot sit comfortably on the ground.

[5] Moreover, there are the deficiencies and drawbacks of the known objects. E.g., the floor space of a tent is often uneven or slanted and transports moisture from the ground. Furthermore, an attack by beetles and/or other insects or small animals cannot be ruled out. In case of rain or moisture, some objects will probably become wet, which has a negative effect on their handling, the achievement of their purpose and their transport (increase in weight). Inflatable accessories, such as an air mattress, are usually subjected to their own heavy weight and to the perpetual danger to be damaged on their floor side and thus to loose their desired function.

Summary of the invention

[6] It is therefore the object of the present invention to provide a device overcoming the disadvantages of the prior art.

[7] This object is achieved by the features of the claims. The present invention is based on the idea of providing a device for transporting objects which may be carried on one's back and is convertible, e.g., into a seat and/or berth. To this end, the basic form of the device is a rucksack.

[8] In a preferred embodiment of the invention, the device is convertible into a seat. For this purpose, the device is preferably provided with a hip portion that is convertible into a head portion as well as with a sitting surface. Preferably, the sitting surface is provided with guiding means. More preferably, the device is provided with a rod that may be provided in the vicinity of the guiding means for stabilizing the sitting surface.

[9] In preferred embodiments of the invention, the individual elements may consist either of one or more pieces and may be permanently or detachably connected to the device.

[10] In a further preferred embodiment of the invention, the device may be converted into a suspended seat, the device being provided with ropes or straps or the like such that a suspended seat may be created by using a tree, etc.

[11] In a further preferred embodiment of the invention, the device is convertible into a berth. To this end, the device is provided with a hip portion that may be converted into a head portion, with a reclining surface and a leg portion as well as a storage compartment that is divisible and/or whose position may be changed.

[12] In a further preferred embodiment of the invention, the device is provided with straps and/or ropes or the like so that the reclining surface, such as a hammock, may be suspended, e.g., between two trees or the like.

[13] In further preferred embodiments of the invention, the device is provided with a trolley portion and a telescopic handle so that the user may conveniently draw the device over large even distances (e.g. in an

airport). More preferably, the handle is fastened to the frame in the vicinity of the hip portion.

[14] Preferably, the hip or head portion is padded or paddable.

[15] Preferably, the device is provided with a back portion.

[16] In further preferred embodiments, the device is provided with a sunshade or an umbrella and/or a mosquito net so that the user is protected against the respective negative influences.

Brief description of the drawings

[17] The invention will be illustrated in the following by means of preferred embodiments and the drawing, in which:

[18] Fig. 1 shows a simplified schematic view of the device according to the invention.

[19] Fig. 2 shows a simplified schematic view of a device according to the invention horizontally rotated through 180° as compared to Fig. 1.

[20] Fig. 3 shows a three-dimensional schematic view of a preferred embodiment of the invention, wherein the device is converted into a seat.

[21] Fig. 4 shows a device according to Fig. 3, wherein the device is a suspended seat.

[22] Fig. 5 shows a particularly preferred embodiment of the present invention, wherein the device is converted into a berth and wherein Fig. 5A is a three-dimensional partial view with the storage department laterally unfolded, Fig. 5B is a sectional view of a device according to Fig. 5A, Fig. 5C is a three-dimensional view of divisible, modular storage

compartments and Fig. 5D a top view of a berth according to the invention with the storage compartments being laterally unfolded.

[23] Fig. 6 is an exemplary three-dimensional schematic view of a preferred embodiment of the present invention, wherein the device is a suspended berth.

Detailed description of the preferred embodiments

[24] In some of the Figures and illustrations, some elements and embodiments of the device have not been depicted for the sake of simplicity and clarity.

[25] Fig. 1 shows a simplified schematic view of a preferred device according to the invention for transporting objects on one's back. The device is provided with a frame 1, shoulder straps 2, a hip belt 3, a storage compartment 4 as well as a handle 5. Moreover, in a preferred embodiment of the invention, the device is provided with a hip portion 6 with lateral guiding means 7, 8 as well as a back portion 9. In a further preferred embodiment, the device is provided with guiding means 10, 11 that are preferably detachably or permanently connected to the storage compartment 4 or the back portion 9. The guiding means 7, 8, 10 and/or 11 are preferably loops, rings, tubes, grooves or the like. In a further preferred embodiment of the invention, the frame 1 is essentially U-shaped. In a further preferred embodiment, the frame 1 is detachably and/or adjustably connected to the handle 5 which is essentially U-shaped. This connection is preferably established by a telescopic engagement of the flanks of the frame 1 and the handle 5. The flanks of the frame 1 are preferably guided by the lateral guiding means 10, 11, whereas the flanks of the handle 5 are preferably guided by the guiding means 7, 8. In a preferred embodiment, the

frame 1 is provided with rolls 12, 13 at the side opposite the handle 5. These rolls are preferably arranged laterally approximately where the flanks and the base portion of the frame intersect.

[26] Fig. 1 shows a preferred embodiment of a device according to the invention as a rucksack in carrying position. For carrying, the contoured shoulder straps 2 are positioned on the shoulders such that the device rests on the back of the person carrying the device and the hip portion 6 on his/her hip. For better load distribution and for increasing the carrying convenience, the hip belt 3 is fastened around the waist of the person carrying the device. The length of the straps/belts 2, 3 is preferably adjustable.

[27] Fig. 2 shows a simplified schematic view of a preferred embodiment of the invention, wherein the device is horizontally rotated through 180°. The shoulder straps 2 and the hip belt 3 are wound outside around the storage compartment 4 for fixation. In a further preferred embodiment of the invention, the straps 2 and/or the belts 3 are detachably connected to the device so that they can also be detached. In this position, the device may be seized at the handle 5 and drawn over the ground via the rolls 12, 13. In a particularly preferred embodiment, the handle 5 is vertically adjustable, for example by a telescopic connection with the frame 1. Moreover, the slide-out handle 5 is preferably provided with a locking or adjusting device by means of which it may be locked in at least two positions (drawn out, not drawn out). If longer distances on even ground are covered, e.g., on streets or in airports, the device may thus conveniently be seized by the user at the handle 5 and drawn via the rolls 12, 13.

[28] Fig. 3 shows a simplified schematic view of a preferred embodiment of the invention, in which the device has been converted

into a seat. For the conversion, a device according to Fig. 1 has to be rotated through 180° as depicted in Fig. 2. Moreover, the handle 5, which is connected to the frame 1 in a telescopic manner, is detached from the frame 1. Then, the hip portion 6, which is provided with lateral guiding means 7, 8, is folded upwards about 180°. Subsequently, the handle 5 may be re-connected to the frame 1, the flanks of the handle 5 being pushed through the guiding means 7, 8 of the hip portion 6. The handle 5 and the frame 1 are locked in an intermediate position, the distance between the handle 5 and the base portion of the frame 1 being greater than before. By folding the hip portion 6 upwards, the back surface 9 is elongated by the height of the hip portion 6 so that in the seat, the hip portion 6 serves as a head portion or headrest. Then, the sitting surface 14 is fastened to the base surface or lower surface (when carried: upper surface) of the frame 1 by means of fastening devices 15, 16. If leaned against a tree, wall or the like, the device now serves as a seat, wherein the user sits on the sitting surface 14 while leaning against the back surface 9, the hip portion 6 serving as a headrest. Instead of a tree or a wall, the seat may also be supported in its desired position by at least one, preferably two rods 17. In a further preferred embodiment of the invention, the frame 1 and the handle 5 are arranged such that a rotation of the device through 180°, as described above, is unnecessary.

[29] The sitting surface 14 is preferably insulated, padded and/or waterproof. In a particularly preferred embodiment of the present invention, it serves as a back padding if the device is carried as a rucksack and, to this end, is preferably arranged from outside or inside at the back surface 9 and/or may be detachably fastened thereon. In a further preferred embodiment, the sitting surface is inflatable.

[30] Fig. 4 shows a particularly preferred embodiment of the invention, wherein the device has been converted into a suspended seat. The conversion of the device is first carried out as described above with respect to Fig. 3. If the device has been converted into a seat, a rope S1 is nested in one of the guiding means 7, 8 of the hip portion 6 and guided over a tree, branch or the like and fastened to the other guiding means 7, 8 of the hip portion 6. The rope S1 can be fastened to the guiding means 7, 8 by way of hooks, buckles, knots or similar fastening types or by using additional fastening devices. A rope S2 is fastened to the lower side of the frame 1 preferably near one of the rolls 12, 13 and led over a tree, branch or the like to the sitting portion 14. At the edges facing away from the device, the sitting portion 14 is provided with guiding means 18, 19 which are preferably holes or bores. The rope S2 is led through one of the guiding means 18, 19 along the lower side of the sitting surface 14 and through the other guiding means 18, 19, suspended over the branch and subsequently fastened to the frame 1 of the device preferably in the vicinity of the roll 12 or 13 from which the rope S2 does not start out. In a further preferred embodiment, the rope S1 is fastened to the handle 5. In a further preferred embodiment of the present invention, the rope S2 is fastened between the guiding means 18, 19 to the ground at least in one place via suitable means (such as a peg).

[31] By suspending the seat by means of the ropes S1 and S2, a suspended sitting position is achieved that guarantees comfortable sitting above the ground. Thus, moisture from the ground and animals cannot reach the seat.

[32] In a preferred embodiment of the invention, the rope(s) S1 and/or S2 are provided with means for length adjustment so that the

sitting position may easily be adjusted. The ropes S1 and S2 are preferably fastened to the device via hooks and eyelets, buckles, carabines, knots, or similar fastening types. The rope S2 is preferably led from the place where it is fastened to the frame 1 near one of the rolls 12, 13 over a branch diagonally to the fastening means 18, 19 near the respective roll 12, 13 and from the other fastening means 18, 19 likewise diagonally back near the respective roll 12, 13. In a further preferred embodiment, a rod or tube 20 is preferably provided between the means 18, 19, preferably on the lower side of the sitting surface 14, so that the stability of the sitting surface 14 is guaranteed. In further preferred embodiments, the guiding means 18, 19 are eyelets, loops or the like. In a further preferred embodiment, the guiding means 18, 19 and the rod 20 are combined with a tube provided at the lower side of the seat 14, a groove or the like through which the rope S2 is led.

[33] Fig. 5 shows a simplified schematic view of a further preferred embodiment of the invention, in which the device has been converted into a berth. Fig. 5A shows a sectional view of a converted device. As in the aforementioned devices, the handle 5 is released, the hip padding 6 is unfolded and the handle 5 is guided by the guiding means 7, 8 of the hip portion 6 and connected with the frame 1, which fixes the hip portion 6. As described in connection with Fig. 3, the sitting surface 14 is arranged at the side of the frame 1 opposite the hip portion 6 and serves as leg portion. In this embodiment, the storage compartment 4 is detachable and, in a particularly preferred embodiment divisible, slewable and/or modular. In the preferred embodiment as depicted, the storage compartment 4 is divisible in its center at a joint 21 (cf. Figs. 2-4) along the longitudinal axis into two storage-compartment portions 22 and 23. The portions 22 and 23 are preferably fastened along their

outer longitudinal edges facing the frame 1 to the frame 1. For forming the storage compartment 4, the storage-compartment portions 22 and 23 may be joined along their joint or their separation area 21 via a zipper, a Velcro ® fastener, patent fasteners, hook eyelets and/or the like. For converting the device into the berth shown in Fig. 5A, the storage-compartment portions 22 and 23 are separated and folded outwards along their joint with the frame 1, which connection is preferably flexible and/or releasable, or released. Fig. 5A is a simplification in showing merely the storage-compartment portion 22 unfolded, whereas Fig. 5B also shows a sectional view of the storage-compartment portion 23.

[34] Fig. 5C shows a preferred embodiment of the storage compartment 4 and examplarily depicts the storage-compartment portion 23. As shown, the storage-compartment portion 23 has a modular design and consists of storage-compartment portions 23a, 23b and 23c, which are interconnected, for instance, by means of zippers, Velcro ® fasteners, patent fasteners, hook eyelets, buttons or the like. Each of the storage-compartment portions 23a, 23b and 23c forms a closed storage-compartment unit. In a preferred embodiment of the invention, the storage compartment 4 has a modular design so that various combinations of all storage-compartment portions may be releasably connected and jointly form the storage compartment 4. The modular design of storage compartment 4 makes it possible to store and transport different kinds and groups of objects to be transported separated from each other and individually accessible. E.g., clothes, toiletry, food, tools, etc. can be stored separated from each other and individually accessible in different storage-compartment portions.

[35] Fig. 5D shows a top view of the device according to the invention according to Figs. 5A and 5B. The storage-compartment portions 22 and 23, which are laterally unfolded, are clearly visible. In a further embodiment according to the invention, the storage compartment 4 does not have to be divided into two storage-compartment portions but may be unfolded as a whole in one direction or it is completely detachable from the frame 1. In further preferred embodiments, the separation area 21 is not central but laterally offset or transversely arranged. The design of the storage department 4 or the individual storage-compartment portions depends on the concrete conditions of the intended use and the application range.

[36] Fig. 6 shows a further particularly preferred embodiment of the invention, in which the device has been converted into a suspended berth. To this end, as already described in connection with Fig. 5, the hip portion 6 is unfolded to form the head portion and the sitting surface 14 or the leg portion 14 is fastened to the frame 1. Since in the present case the berth does not contact the ground, it is unnecessary to unfold or remove the storage compartment 4 or individual storage-compartment portions. For suspending the berth, two trees B1 and B2 or similar auxiliary means having a suitable distance from one another are necessary. The device can also be fastened to three or four trees or the like.

[37] For suspension, a rope S2 is wound once or several times around one of the trees B1 and B2. The rope is fastened to the frame 1 near one of the rolls 12, 13, preferably by engagement by leading it through an eyelet, a groove or the like. Subsequently, the rope is wound once or several times around the second tree B 2 or B1 and led back to its beginning, while being arranged correspondingly at the frame 1 near the

other roll 12, 13. The ends of the rope S2 are connected such that the berth is in the desired height and position. The ends of the ropes may simply be tied up or rigidly or adjustably joined by means of a suitable fastening device. The ends of the rope S2 may also be individually fastened to one of the trees B1 and B2. Depending on the preferred lying position, the rope can optionally also be led by the guiding means 10, 11 that are laterally arranged at the frame 1 or the back portion 9 and/or by the guiding means 7, 8 at the hip or head portion 6. In a further preferred embodiment of the invention, the frame 1 is hollow and provided with several eyelets or other guiding means so that the rope may be led or fastened at least over part of the length of the frame 1 within or at the latter. For fastening the leg portion 14, said leg portion is provided at its outer edges facing away from the device with guiding or fastening means 24, 25 with which the rope S2 may be engaged or to which it may be fastened. In a preferred embodiment, for stabilizing this structure and guaranteeing a sufficient expansion of the reclining surface, at least one rod 26 is arranged between the parallel strings of the rope S2 in front of the head and/or the foot end of the device in order to lead the parallel rope strings at a predetermined distance from each other. The rods 26 prevent the strings of the rope S2 from being to close to each other, which would result in a smaller reclining surface or a reduction of the stability. This is above all necessary if the diameter of the trees or fastening elements B1, B2 is small.

[38] In a particularly preferred embodiment, the rods 17, 20 and 26 are identical. In a further preferred embodiment, two rods 17, 20, 26 are arranged at the frame 1 or the handle 5 or in the hollow frame 1 or handle 5 during transport. In a further preferred embodiment, two rods 17, 20, 26 are arranged between the handle 5 and the frame 1 parallel

to their flanks such that the straps 2 are arranged thereon. The connection between the straps 2 and the rods 17, 20, 26 is preferably flexible and vertically adjustable. The rods 17, 20, 26 are preferably telescopic rods that are lengthwise adjustable.

[39] In a preferred embodiment of the invention, the shoulder strap 2 is provided below the leg portion 14 between the frame 1 and the guiding or fastening means 24, 25 (for clarity reasons shown in Fig. 6 on top) for stabilizing the leg portion 14. To this end, the shoulder straps 2 can be detached at their lower side from the device and led below the leg portion and fastened to the means 24, 25. In a further preferred embodiment, the shoulder straps 2 are completely detached from the device and fastened between the rolls 12, 13 at the lower part of the frame 1 and stretched towards the means 24, 25.

[40] In a further preferred embodiment of the invention, the rope S1 is stretched above the suspended berth between the trees B1 and B2. A protective awning 27 and/or a mosquito net 28 are hung over the rope S1 such that they cover the berth and droop over its sides. In a further preferred embodiment, the protective awning 27 and/or the mosquito net 28 may be secured or fastened to the berth. In a further preferred embodiment, the essentially triangular openings remaining in the head and leg portions are closed by respective awnings (not shown) by attaching them to the protective awning 27, the mosquito net 28 and/or the berth. This ensures protection against any environmental influences, such as rain and/or animals or insects, particularly beetles, flies, mosquitoes, etc.

[41] Basically, one can get into or climb out of the berth from the sides, as it is known from conventional hammocks. In a preferred embodiment, it is further possible to detach the leg portion 14 from

the frame 1 and to unfold it or shift it towards the tree B1. The resultant opening provides for an entrance between the device, the leg portion and the rope strings S2 through which entrance the user can swing him/herself onto the back portion. After lifting one's legs and letting them hang down laterally, the leg portion 14 is re-attached to the frame 1 so that one can subsequently stretch out one's legs and lay them down on the leg portion 14. For climbing out, this order has to be reversed. If the shoulder straps 2 are used as supports for the leg portion, they are also detached from the frame 1 for climbing into or out of the berth.

[42] In a further preferred embodiment of the invention, the suspended berth as described above is converted into a swinging berth that is similar to a hammock. To this end, the parallel strings of the rope S2 are tied up between the berth and the tree or between the rod 26 and the tree on both sides at the locations 29 (only shown between the device and the tree B1). In principle, the closer the strings of the rope S2 get to each other and the closer the location 29 is to the tree B1 or B2, the more capable of swinging the berth gets.

[43] In preferred embodiments of the invention, the individual elements of the device are padded; preferably, the leg or sitting surface 14, the back surface 9 and the head or hip portion 6 as well as the transitions between these elements are particularly padded or particularly paddable. The padding may be achieved by means of a foamed material, inflation or the like. Moreover, at least some of the individual elements or components of the device are insulated against cold, heat and/or moisture. In a preferred embodiment of the invention, the frame 1 has a flattened and curved base portion between the rolls 12, 13 such that it is always adapted to the body

contours when used either as a rucksack, a seat or a berth. In a further preferred embodiment, the frame 1 is padded so that it is more comfortable to be carried, to sit on or to lie on. In a further preferred embodiment of the invention, the individual components are padded and shaped with respect to each other such that the shapes of the individual devices – rucksack, seat or berth – are adapted to the body anatomy. In preferred embodiments of the invention, the individual elements are adjustable, e.g., by the exchangeability of padded portions of different sizes, and are thus adaptable to the individual requirements.

[44] The individual elements of the device may be connected in different ways; however, if possible, uniform connecting means are preferably used in order to increase flexibility. Such means are preferably zippers, hook-and-eyelet closures, Velcro ® fasteners, buttons or patent fasteners, connections by means of ropes that are tied up, etc.

[45] Further preferred embodiments of the invention result from combinations of one, more or the described embodiments. The volume and dimensions of the device differ from those shown in the drawing since they strongly depend on the respective use and/or the size of the user and may be varied correspondingly.

[46] The device according to the invention is advantageous in that it ensures optimal storage of the objects to be transported and can moreover be converted into a comfortable seat and/or suspended seat and furthermore into a comfortable berth and/or suspended berth, which may also be used as a suspended tent. This results in a maximum mass and volume of the objects to be transported while the functions and fields of application are maximized.